

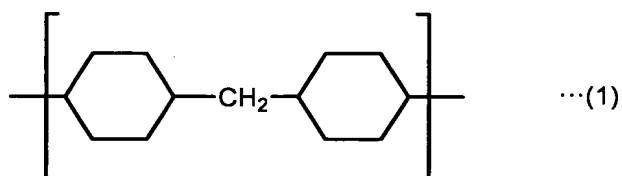
CLAIMS

1. A prepreg obtained by impregnating a resin composition comprising a resin with an imide structure and a thermosetting resin into a fiber base material with a thickness of 5-50 μm .

5 2. A prepreg according to claim 1, wherein said resin with an imide structure has a siloxane structure.

3. A prepreg according to claim 1 or 2, wherein said resin with an imide structure has a structure represented by the following general formula (1).

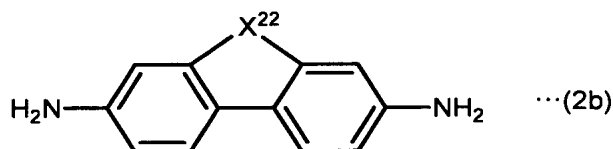
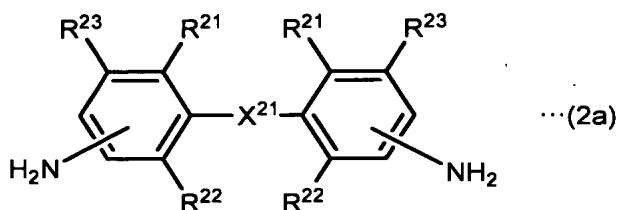
10 [Chemical Formula 1]



4. A prepreg according to any one of claims 1 to 3, wherein said resin with an imide structure is a polyamideimide resin.

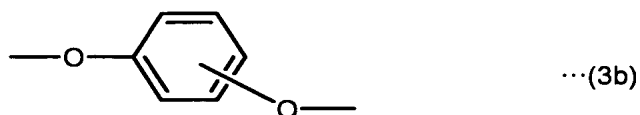
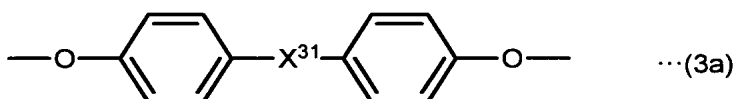
15 5. A prepreg according to any one of claims 1 to 4, wherein said resin with an imide structure is a polyamideimide resin obtained by reacting a diisocyanate compound with a mixture containing a diimidedicarboxylic acid obtained by reacting a mixture containing a siloxanediamine and a diamine represented by the following general formula (2a) or (2b) with trimellitic anhydride.

20 [Chemical Formula 2]



[wherein X^{21} represents a C1-3 aliphatic hydrocarbon group, C1-3 halogenated aliphatic hydrocarbon group, sulfonyl group, ether group or carbonyl group, a single bond, a divalent group represented by the following general formula (3a) or a divalent group represented by the following general formula (3b), X^{22} represents a C1-3 aliphatic hydrocarbon group, C1-3 halogenated aliphatic hydrocarbon group, sulfonyl group, ether group or carbonyl group, and R^{21} , R^{22} and R^{23} each independently or identically represent hydrogen, hydroxyl, methoxy, methyl or halogenated methyl.

[Chemical Formula 3]

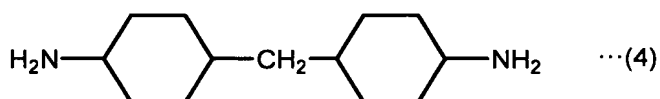


(wherein X^{31} represents a C1-3 aliphatic hydrocarbon group, C1-3 halogenated aliphatic hydrocarbon group, sulfonyl group, ether group or carbonyl group, or a single bond.)]

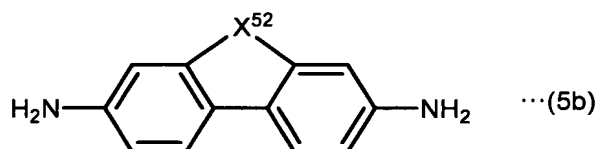
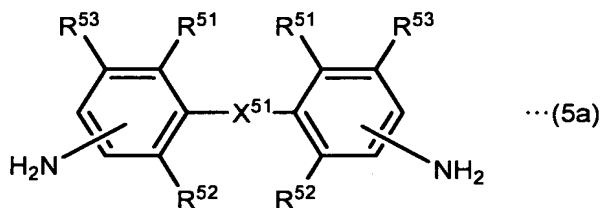
6. A prepreg according to any one of claims 1 to 4, wherein said resin with an imide structure is a polyamideimide resin obtained by reacting

a diisocyanate compound with a mixture containing a diimidedicarboxylic acid obtained by reacting a mixture containing a diamine represented by the following general formula (4), a siloxanediamine and a diamine represented by the following general formula (5a) or (5b), with trimellitic anhydride.

[Chemical Formula 4]

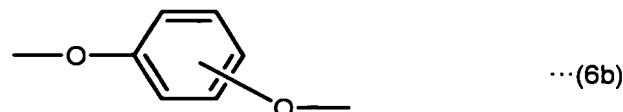
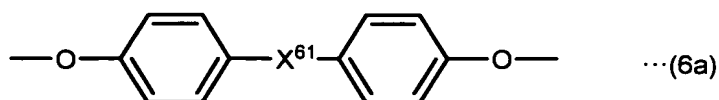


[Chemical Formula 5]



[wherein X^{51} represents a C1-3 aliphatic hydrocarbon group, C1-3 halogenated aliphatic hydrocarbon group, sulfonyl group, ether group or carbonyl group, a single bond, a divalent group represented by the following general formula (6a) or a divalent group represented by the following general formula (6b), X^{52} represents a C1-3 aliphatic hydrocarbon group, C1-3 halogenated aliphatic hydrocarbon group, sulfonyl group, ether group or carbonyl group, and R^{51} , R^{52} and R^{53} each independently or identically represent hydrogen, hydroxyl, methoxy, methyl or halogenated methyl.

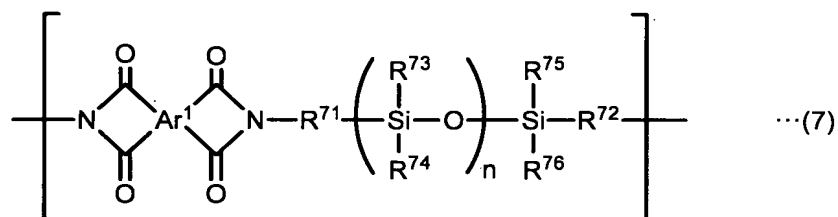
[Chemical Formula 6]



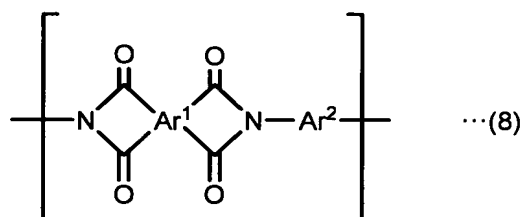
(wherein X^{61} represents a C1-3 aliphatic hydrocarbon group, C1-3 halogenated aliphatic hydrocarbon group, sulfonyl group, ether group or carbonyl group, or a single bond.)]

- 5 7. A prepreg according to claim 1 or 2, wherein said resin with an imide structure is a polyimide resin having the structure represented by the following general formula (7) or a polyimide resin having the structure represented by the following general formula (7) and the structure represented by the following general formula (8).

10 [Chemical Formula 7]



[Chemical Formula 8]

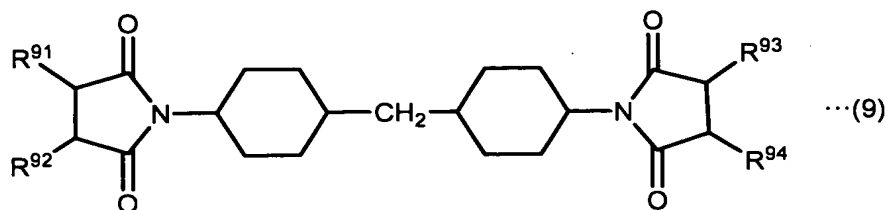


- 15 [wherein Ar^1 represents a tetravalent aromatic group, Ar^2 represents a divalent aromatic group, R^{71} and R^{72} each independently or identically represent a divalent hydrocarbon group, R^{73} , R^{74} , R^{75} and R^{76} each independently or identically represent a C1-6 hydrocarbon group, and n

represents an integer of 1-50.]

8. A prepreg according to any one of claims 1 to 4, wherein said resin with an imide structure is a polyamideimide resin having the structure represented by the following general formula (9).

[Chemical Formula 9]



[wherein R⁹¹, R⁹², R⁹³ and R⁹⁴ each represent a carbon atom from a portion of the cyclic or linear structure composing the polyamideimide resin.]

9. A prepreg according to any one of claims 1 to 8, wherein said thermosetting resin is an epoxy resin.

10. A prepreg according to any one of claims 1 to 9, wherein said thermosetting resin is an epoxy resin with two or more glycidyl groups.

11. A prepreg according to any one of claims 1 to 10, wherein said resin composition further contains a phosphorus-containing compound, and said resin composition contains said thermosetting resin at 1-140 parts by weight with respect to 100 parts by weight of said resin with an imide structure, and phosphorus at 0.1-5 wt% of the total weight of the resin solid portion.

12. A prepreg according to any one of claims 1 to 11, wherein said resin composition further contains a hindered phenol-based or organic sulfur compound-based antioxidant.

13. A prepreg according to claim 12, wherein said antioxidant is one or more types of antioxidant selected from the group consisting of

butylated hydroxyanisole, 2,6-di-t-butyl-4-ethylphenol, 2,2'-methylene-bis(4-methyl-6-t-butylphenol), 4,4'-thiobis-(3-methyl-6-t-butylphenol), 4,4'-butylidenebis(3-methyl-6-t-butylphenol), 1,1,3-tris(2-methyl-4-hydroxy-5-t-butylphenyl)butane, 1,3,5-trimethyl-2,4,6-tris(3,5-di-t-butyl-4-hydroxybenzyl)benzene, tetrakis-[methylene-3-(3',5'-di-t-butyl-4'-hydroxyphenylpropionate)methane, dilauryl thiodipropionate and distearyl thiodipropionate.

14. A prepreg according to any one of claims 1 to 13, which has a combustion distance of no greater than 100 mm in a UL-94 VTM test, when cured to form a base material.

15. A metal foil-clad laminate obtained by stacking a prescribed number of prepreps according to any one of claims 1 to 14, situating a metal foil on either or both sides thereof and subjecting the stack to heat and pressure.

16. A printed circuit board obtained by forming a circuit on the metal foil of a metal foil-clad laminate according to claim 15.